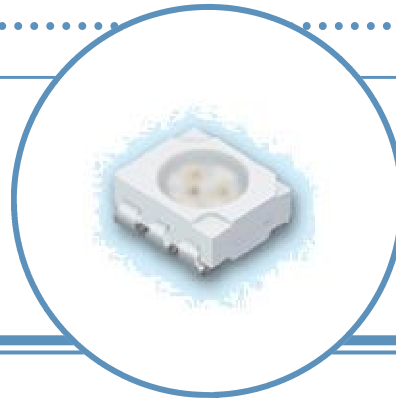
Full Color PLCC6 LED

TT electronics
OPTEK Technology



OVSTRGBBCR8

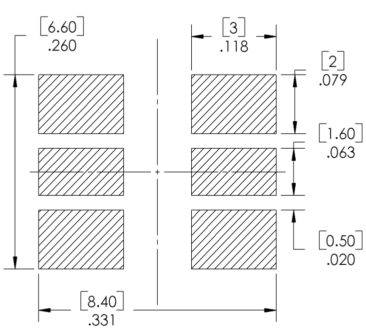
- Full-color red/green/blue
- PLCC package with 6 pins
- Wide viewing angle
- High performance
- Tuneable color mix

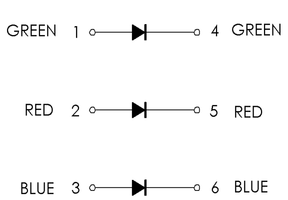
The **OVSTRGBBCR8** package design provides wide viewing angle, low power consumption, and high luminous intensity. Color on demand is made possible by isolated chip circuits, allowing each LED to be driven individually or in tunable color combinations.

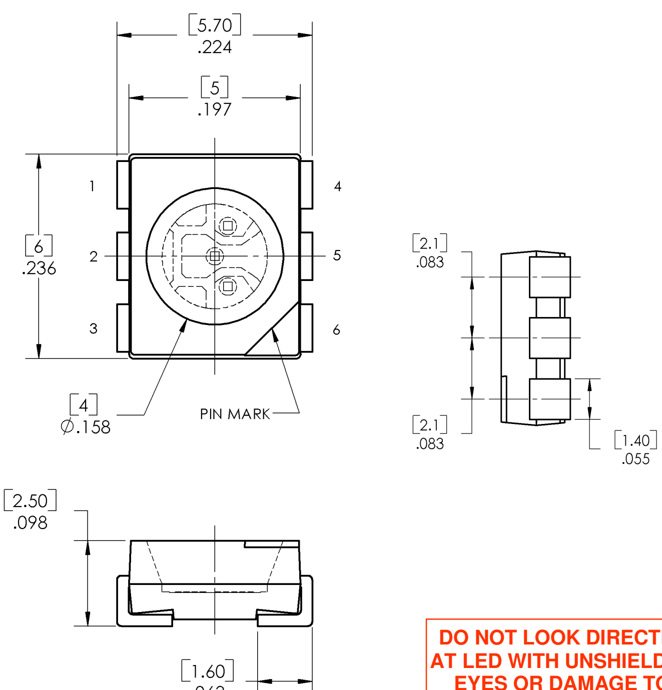
Applications

- Amusement equipment
- Information boards
- Automotive interior lighting
- Portable appliances
- Indoor and outdoor displays
- Backlighting
- Camera flash
- RGB full-color displays

Part Number	Chip				Lens Color
	Type	Material	Emitted Color	Intensity Typ. mcd	
OVSTRGBBCR8	R	AlInGaP	Red	1000	Water Clear
	G	InGaN	Green	900	
	B	InGaN	Blue	280	







RoHS Moisture

ATTENTION
OBSERVE PRECAUTIONS ELECTROSTATIC SENSITIVE DEVICES

DIMENSIONS ARE IN: **[MILLIMETERS] INCHES**

DO NOT LOOK DIRECTLY AT LED WITH UNSHIELDED EYES OR DAMAGE TO RETINA MAY OCCUR.

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Absolute Maximum Ratings

$T_A = 25^{o}$ C unless otherwise noted

PARAMETER	RATING			UNIT
	R	G	B	
Storage Temperature	-40 ~ +100			℃
Operating Temperature	-40 ~ +100			℃
Reverse Voltage	5			V
Continuous Forward Current[1]	80	80	80	mA
Peak Forward Current (10% Duty Cycle, PW ≤ 100 µsec)	200	100	100	mA
Power Dissipation	260	410	410	mW
Junction Temperature	110	110	110	℃
Junction/ambient (1 chip on[2])	250	210	210	℃/W
Junction/ambient (3 chips on[2])	500	300	300	℃/W
Junction/solder point (1 chip on)	150	130	130	℃/W
Junction/solder point (3 chips on)	150	160	160	℃/W

Notes:
1. Single color light
2. Rth test condition: Mounted on PC Board FR 4 (pad size ≥ 40mm^2)

Electrical Characteristics

$T_A = 25^{o}$ C unless otherwise noted

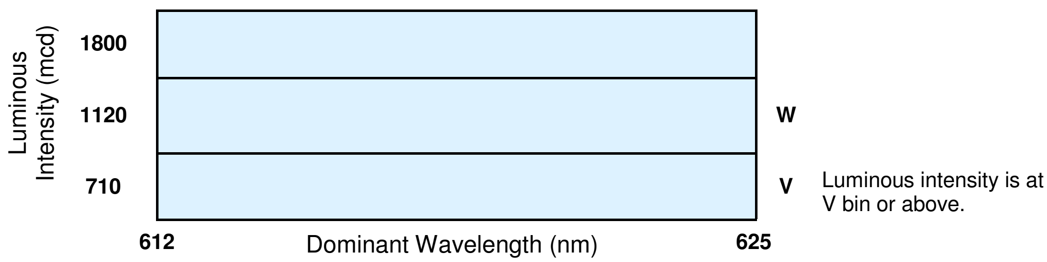
SYMBOL	PARAMETER	VALUES				UNIT	CONDITIONS
			R	G	B		
I_V	Luminous Intensity	Min	710	710	180	mcd	I_F = 50 mA
		Avg	1000	900	280		
V_F	Forward Voltage	Avg	2.5	4.5	4.5	V	I_F = 50 mA
		Max	3.2	5.1	5.1		
I_R	Reverse Current (max)		10	10	10	µA	V_R = 5 V
λ_D	Dominant Wavelength		624	525	470	nm	I_F = 50 mA
λ_P	Wavelength at Peak Emission		620	521	468	nm	I_F = 50 mA
2 Θ½	50% Power Angle		120	120	120	deg	I_F = 50 mA
Δλ	Spectrum Radiation Bandwidth		24	38	28	nm	I_F = 50 mA

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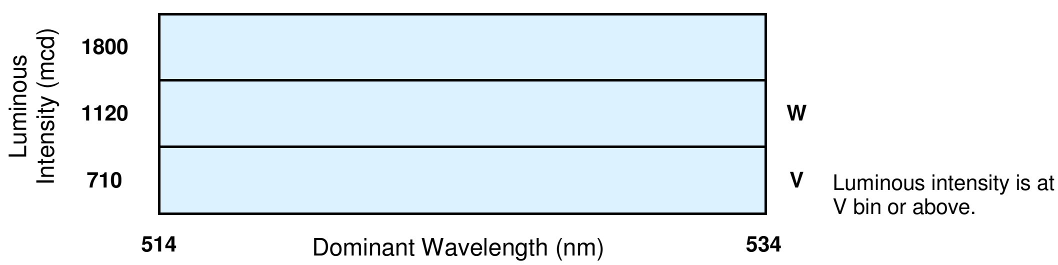
Standard Bins (I_F = 50 mA)

Lamps are sorted to luminous intensity (I_V) and dominant wavelength (λ_D) bins shown.
Orders for OVSTRGBBCR8 may be filled with any or all bins contained as below.

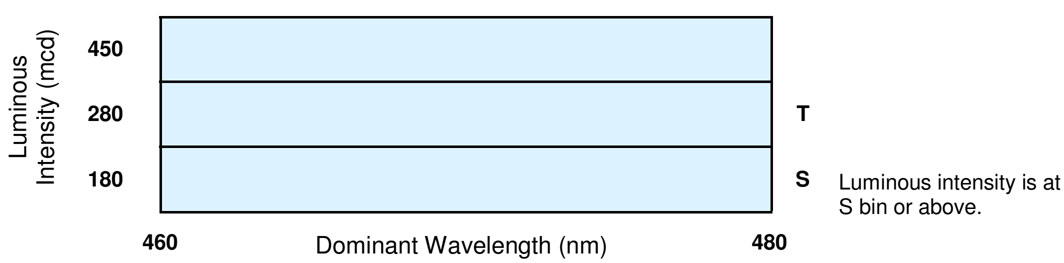
RED



GREEN

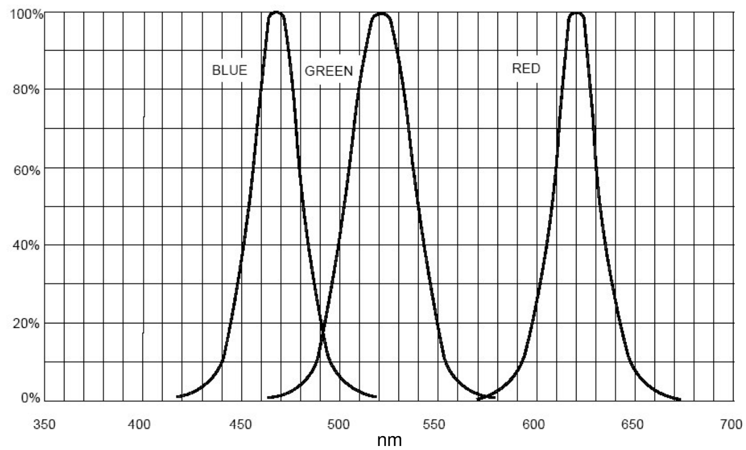


BLUE

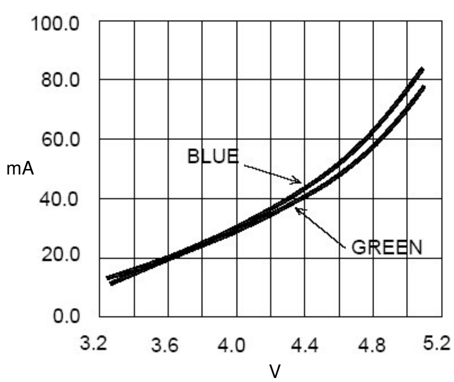


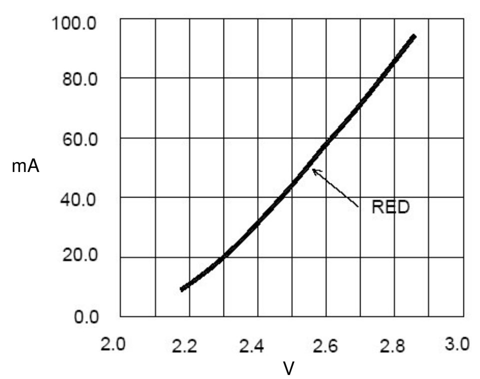
Notes:
1. All ranks will be included per delivery, rank ratio will be based on the chip distribution.
2. Tolerance of measurement of luminous intensity is ±10%.
3. Tolerance of measurement of dominant wavelength is ±1 nm.
4. Tolerance of measurement of V_F is ±0.05V.

Typical Electro-Optical Characteristics Curves

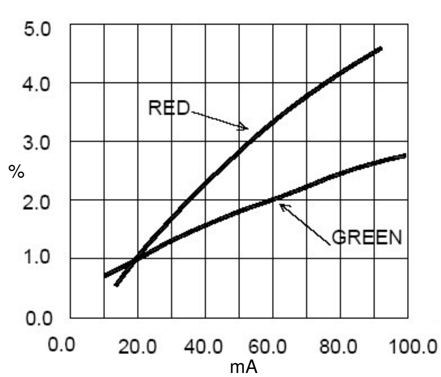


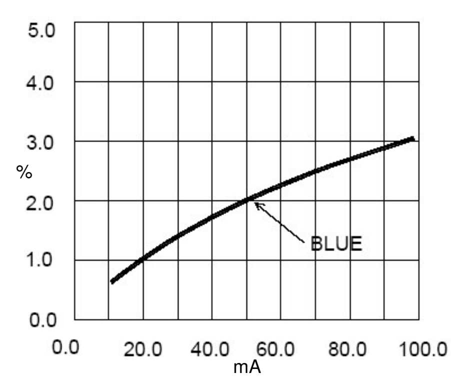
Relative Intensity vs Dominant Wavelength





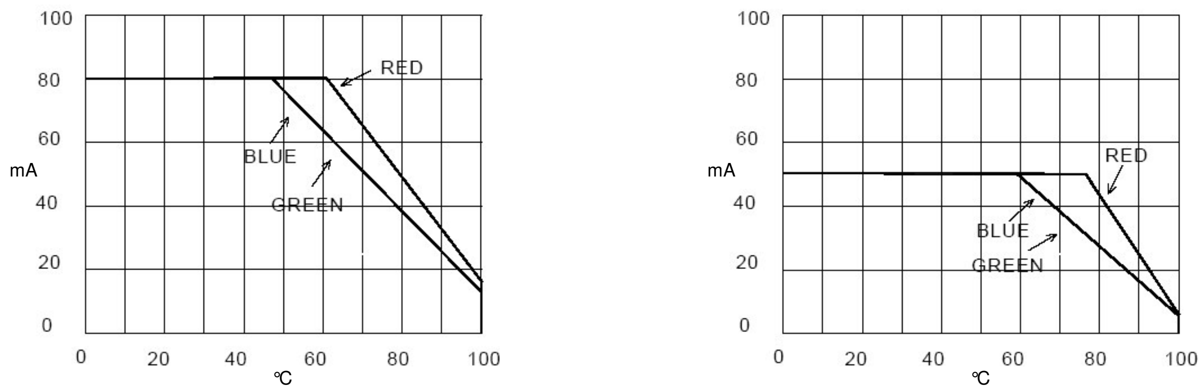
Forward Current vs Forward Voltage



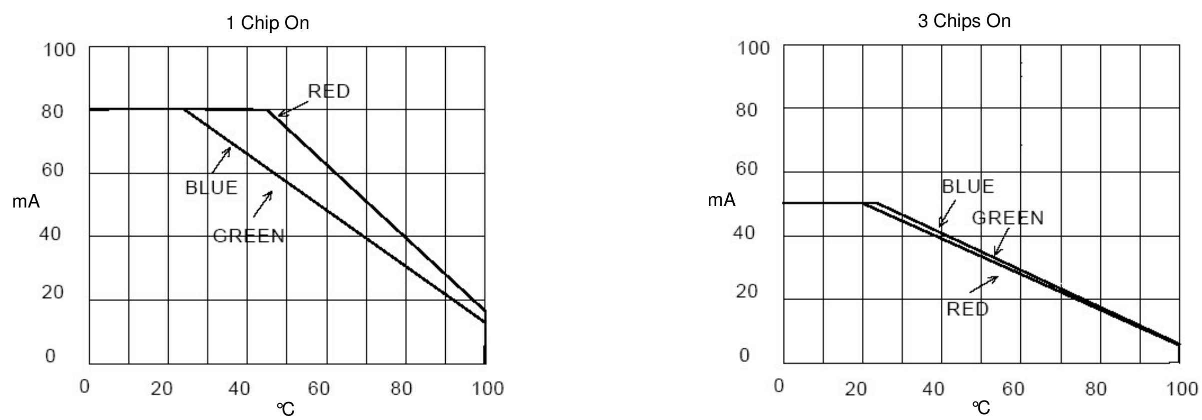


Relative Luminous Intensity vs Forward Current

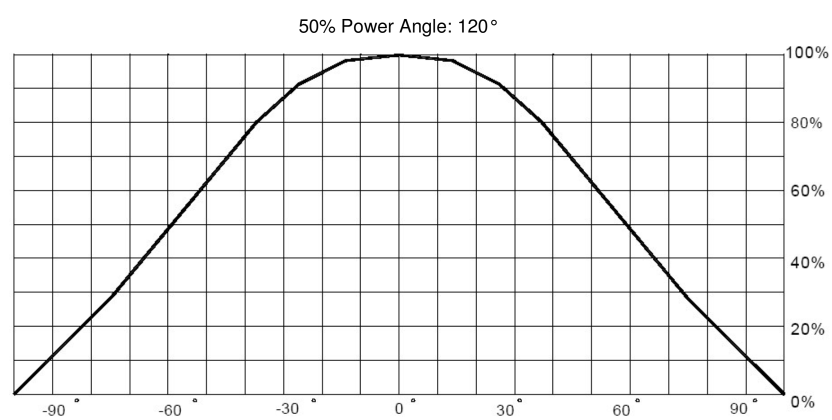
Typical Electro-Optical Characteristics Curves



Maximum Forward DC Current vs Solder Point Temperature

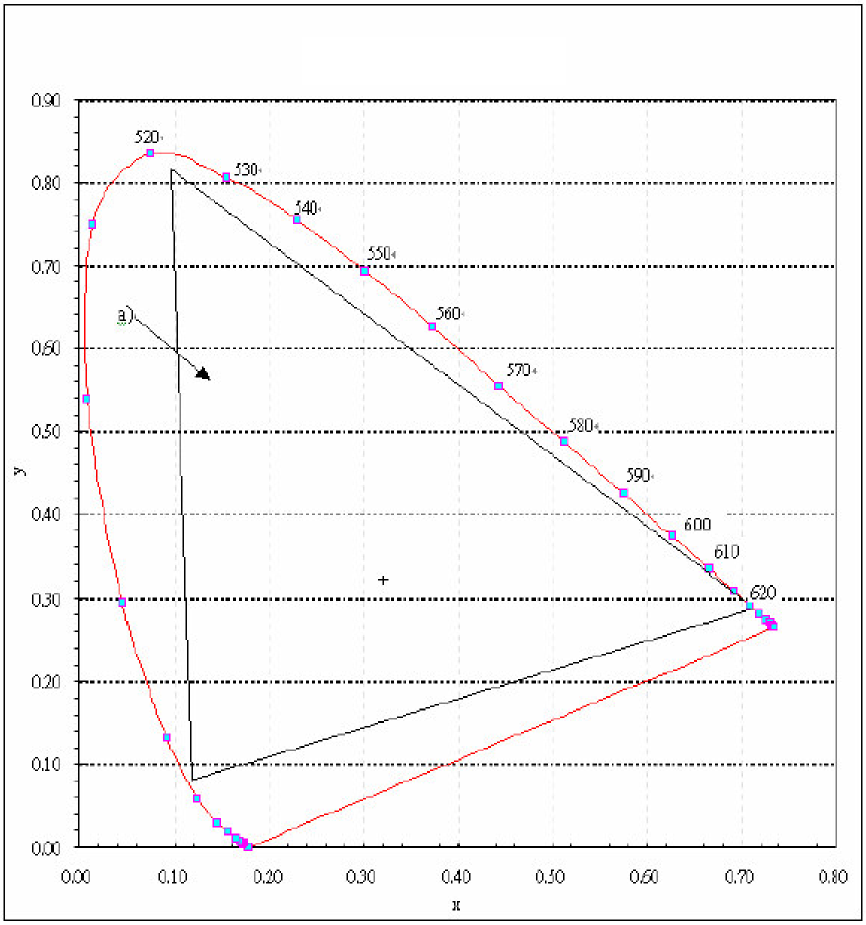


Maximum Forward DC Current vs Ambient Temperature



Far Field Pattern

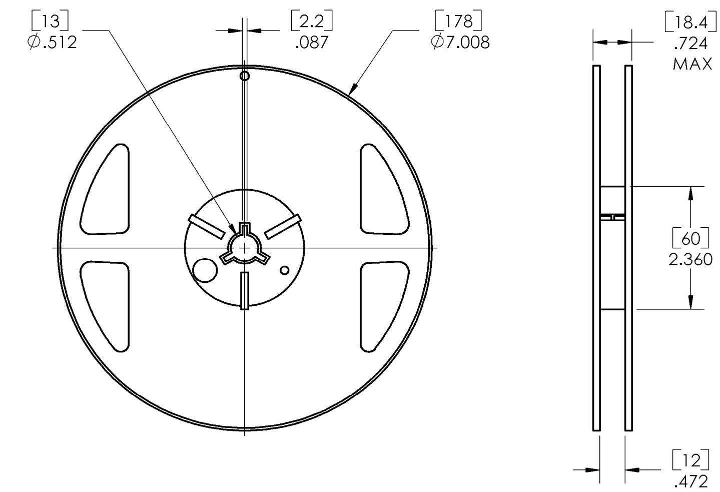
CIE Chromaticity Diagram



Note:
1. The color coordinates of the mixed light can be expected within the area of the color triangle marked a). The achromatic point (x=0.33, y=0.33) is marked "+".

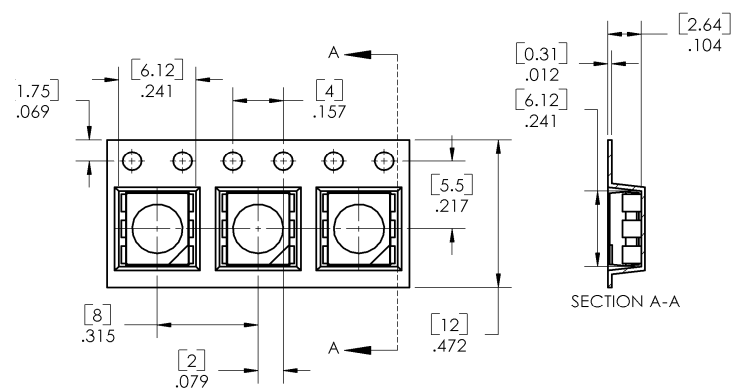
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Reel Dimensions: 13-inch reel



LOADED QUANTITY - 2000 PCS PER REEL

Carrier Tape Dimensions: Loaded quantity 2000 pieces per reel



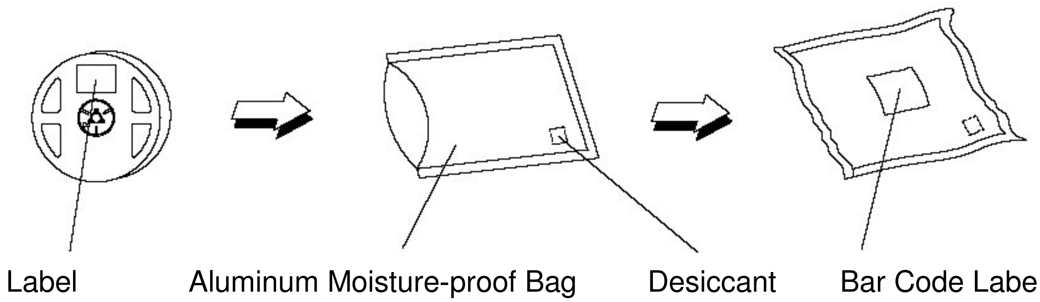
DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

ITEM	W	A_0	B_0	K_0	T	P	F	E	D	D_1	P_0	P_2
DIM	$12.0^{+0.30}_{-0.10}$	$6.12^{+0.10}_{-0.10}$	$6.12^{+0.10}_{-0.10}$	$2.64^{+0.10}_{-0.10}$	$0.305^{+0.02}_{-0.02}$	$8.00^{+0.10}_{-0.10}$	$5.50^{+0.10}_{-0.10}$	$1.75^{+0.10}_{-0.10}$	$ø1.50^{+0.10}_{-0.00}$	ø1.50MIN	$4.00^{+0.10}_{-0.10}$	$2.00^{+0.05}_{-0.05}$

Notes:

1. 10 sprocket hole pitch cumulative tolerance ±0.20 mm.
2. Carrier camber not to exceed 1 mm in 100 mm.
3. A_0 and B_0 measured on a plane 0.3 mm above the bottom of the pocket.
4. K_0 measured from a p lane on the inside bottom of the pocket to the top surface of the carrier.
5. All dimensions meet EIA-481-2A requirements.
6. Material: Black Anti-static Polystyrene.
7. Thickness: 0.305±0.02 mm.

Moisture Resistant Packaging



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